THE DAK GENEVA MANUAL
DAK REFERENCE NUMBER #4475

BY

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1. Introduction:

Congratulations on the purchase of your Epson Geneva Computer. It is a remarkable little machine that gives you all the power of a desktop computer at a fraction of the size. A large part of this manual was composed right on the Geneva and uploaded to a desktop computer for printing. The basic purpose of this manual is to act as a guide for the first time user. Whether you have used a computer before or not, this manual will assist you in learning the proper operation of the Geneva. This manual was designed with the technical neophyte in mind, if you are a very experienced computer user, this manual might be somewhat simplistic for you. I suggest that the more experienced users refer to the Epson documentation, but first glance over this manual and see if it can be useful to you.

In this document we have gotten right to the heart of the matter, setting up and using the Geneva. We will have you creating and printing Wordstar (the Word Processor) files in a matter of minutes. We have cut out all the fat that was in the other manuals, so you will not have to sift through pages of gibberish to get the machine running. Once you are familiar with the Geneva, you will be able to locate almost all the information you'll need in the Epson manuals, which are beautifully written and very clear in their descriptions of different procedures.

Included with the Geneva are several other devices which make the device more versatile, we will explain the use of these extra 'gadgets.' We will also mention the use of the ROM capsules and the microcassette. Hopefully, we will answer all the questions, that you might encounter while learning about and using the Geneva. It is a marvelous machine, but like any computer, requires time and patience to learn how to use properly.

2. Unpacking the Geneva:

I know that you are probably bursting at the seams to unpack and 'play' with your new computer, I'm that way too. However, the Geneva package from DAK comes with many items, and care should be taken to make sure that all the accessories have been included with your computer. Therefore, I am including a list of items that will come with your Geneva package, taking into account the fact that some of you ordered the 120K RAM disk or internal modem wedge instead of the Multi Unit 64. Here's the list of items common to all the Geneva packages shipped:

1. The PX-8 Geneva Computer, included in the box:
   a. HOOAAA AC Adapter
   b. PX-8 Basic Reference Manual
   c. PX-8 Command Summary Pamphlet
   d. Warranty Card and other miscellaneous documentation

2. The Wordstar Package, including:
   a. Wordstar, Calc, and Scheduler ROM capsules*
   b. Three Manuals:
      Portable Wordstar Reference Manual
      Portable Wordstar Training Guide
      Portable Calc and Scheduler Manual

3. The Seikosha Printer with documentation

4. The CX-20 Portable Acoustic Coupler Modem with documentation and HOOAAA AC Adapter

5. The DAK Communications ROM capsule* with documentation

6. A printer cable

7. A null modem connector

8. A gender changer

9. Documentation including:
   a. Geneva CP/M-80 Reference Manual
   b. PX-8 Operations Manual
   c. Empty Binder for Basic Reference Manual

If you ordered the standard DAK Geneva package, (DAK order No. 4610,) you also should have:

10. The Multi-Unit 64 Wedge.

If you ordered the internal modem wedge **instead of** the Multi-Unit 64, (DAK order No. 4611,) included will be:

10. The Modem Unit Wedge

For those of you who ordered the 120K RAM Disk **instead of** the Multi-Unit 64, (DAK order No. 4612,) you will receive:

10. The RAM Disk Unit 120

Please compare this list to the items you received, if you should find that some of the items are missing, please contact DAK immediately and we will assist you in correcting the error.

* A ROM capsule is a Read Only Memory Chip that contains the program mentioned. This little device plugs into the Geneva socket located under the unit.

3. Setting up the Geneva:

A. Connecting the Main Battery.

Now that you have successfully made sure that all components to your Geneva computer were received, (we hope) you may "bring up" the computer. First, the main batteries have to be connected. The Geneva was shipped with the main battery disconnected so the battery wouldn't be completely discharged when you received the computer. It is important that the battery be disconnected while the unit is stored for long periods of

time, otherwise the battery can become over-discharged resulting in permanent damage to it.

The main battery is located inside the bottom of the Geneva. To get to it, close of folding screen and put the keyboard cover on, (if you just unpacked the unit, the screen and keyboard cover should already be in place.) The procedure is as follows:

1. Turn the Geneva over so it's upside down and lying flat on a desk or table. The battery is located under the cover near the back of the unit. (If for some reason, a add-on wedge has already been attached to Geneva, it will have to be removed.) The cover is closed by a screw, (see figure 1.)

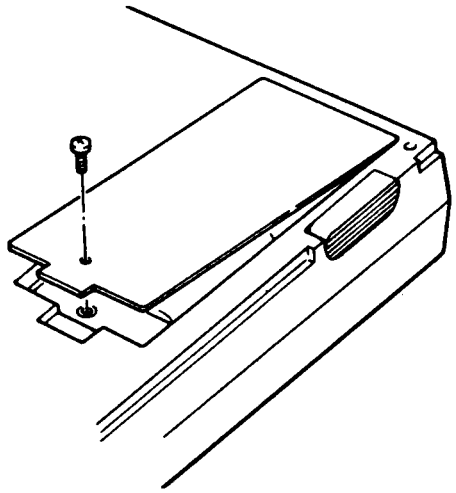

Figure 1, The battery compartment underneath the Geneva

2. Because the Geneva is sensitive to static, touch some grounded metal object (such as your telephone, filing cabinet, or any large metal object within reach) before you open the battery compartment.

3. Use a small flatblade screw driver to remove the screw. Then lift off the cover to expose the battery compartment.

4. Remove the battery, (tilting the Geneva will allow the battery to roll out.)

5. At the end of the compartment, near the screw, you'll see a small switch and a small plug. Insert the connector on the end of the battery wires into the plug (see figure 2.) It only fits if the black wire is nearest the switch.

6. Turn on the battery by pushing the small black switch marked 'Backup' to the 'ON' position. This will allow the Geneva to draw from the internal backup batteries in the event that the main batteries get too low. The backup batteries are recharged while the Geneva is connected to it's AC adapter. If the main batteries' voltage should drop below a certain level, the Geneva will not power-up when switched on,

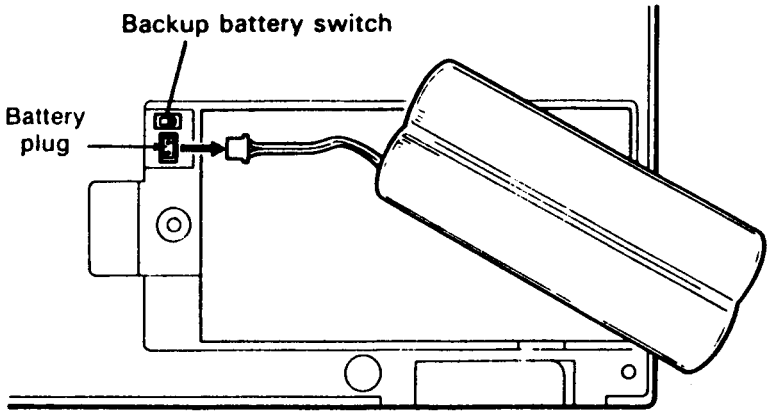

Figure 2, Plug in the battery connector, keeping the black wire next to the switch

but all RAM will be protected by the main batteries and then the backup batteries in critical situations. The message 'CHARGE BATTERIES' will appear on the display should the main batteries need charging while the unit is switched on.

7. Place the battery back in its compartment with the EPSON label facing up. Loop the wire around the post that the screw fits into.

8. Replace the cover, and tighten the screw. Now you are ready to initialize the Geneva.

B. Initializing the Geneva.

After connecting the battery, the Geneva requires an initial reset. To perform the initial reset, follow these steps:

1. Connect the Geneva to its AC adapter, making sure that the barrel connector from the adapter is inserted in the jack labeled 'ADAPTOR' (yes, that's the way they spelled it.) This jack is located on the left rear panel of the Geneva (see figure 3.) Plug the adapter into a 120 AC outlet.

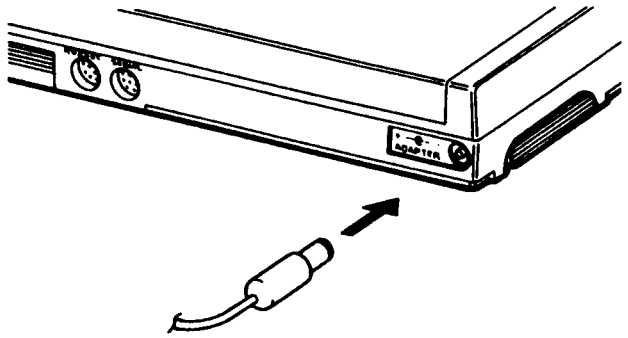

Figure 3, Plug the adapter plug into the jack at the right rear corner of the Geneva.

WARNING: **Never use any AC adapter except the one provided with your Geneva. Using an incorrect adapter can damage your Geneva computer.**

2. Allow the Geneva to charge for at least 10 minutes to give the battery enough charge for the system to be reset properly.

3. Unplug the adapter.

4. Turn the Geneva over again so its bottom panel is facing upward. Toward the front, you'll find the square cover to the ROM capsule compartment (see Figure 4.) Push the latch marked 'OPEN' to remove the cover.

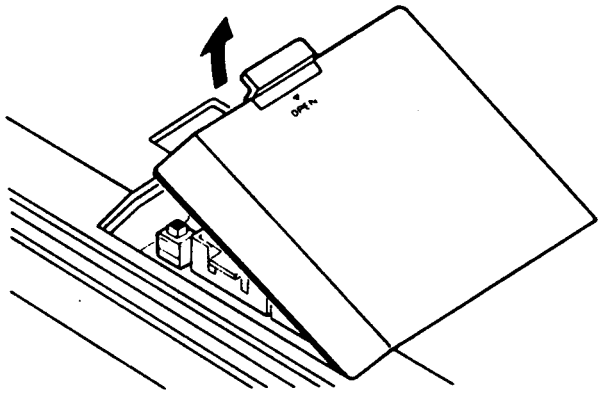

Figure 4, The ROM capsule compartment cover, the initial reset button is inside.

5. Lift the silver flap out of the way. You'll see a small red device labeled 'Initial Reset' in the corner of the compartment, (see Figure 5.) Actually, this is the reset push button, the red cap is designed to prevent accidental resetting of the Geneva.

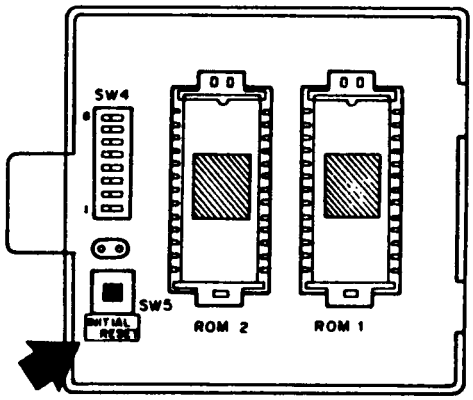

Figure 5, Press the initial reset button to start the Geneva for the first time.

6. Use a ballpoint pen or some similar pointed object to press the button through the red cap. The Geneva is now reset, (it does not matter whether the power switch is ON or OFF when you press this button. Either way, this button will completely reset the Geneva.)

WARNING: **Do not get into the habit of using the Initial Reset Button. When depressed, the Geneva will totally clear itself and all RAM, and Disk RAM will be wiped clean. This button is only used after installing or replacing the main batteries, or when the rare situation occurs where the Geneva 'locks-up' and other resets do not work.**

7. Replace the ROM capsule cover and turn the Geneva right side up.

C. Powering Up the Geneva.

You are now ready to turn on the Geneva computer. First slide the keyboard cover off the unit towards you, and lift the cover off the keyboard. Located on the right side of the unit, just above the keyboard is a latch switch labeled 'UNLOCK'. Push this switch away from the front of the Geneva and the LCD display will 'pop' up. Lift the display and position it for comfortable viewing. On the right side panel of the unit is a switch labeled 'POWER', slide this switch to the 'ON' position. The word 'initializing' should appear on the screen, if not, slide the switch labeled 'View Angle' to intensify the display contrast, (see Figure 6.)

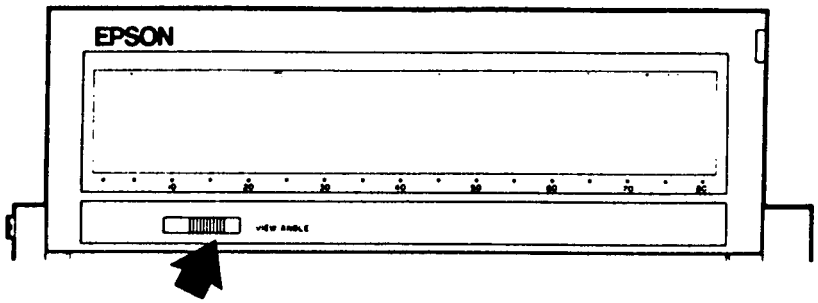

Figure 6, Slide the view angle switch left and right to adjust the screen contrast.

If you are still unable to see the display, shut the Geneva off and momentarily remove the adapter barrel connector. Replacing the adapter plug will start the charging process again. Let the main batteries charge for another 15 minutes and then repeat the initialization procedure outlined earlier. If the unit will not power up after a second attempt, contact the technical support staff at DAK for assistance.

It should also be noted that the Geneva most likely will be in need of a good charge. It will charge completely in roughly 8 hours while powered off and about 15 hours if turned on. In either case, be sure to charge the unit fully before attempting to use the unit while it is disconnected from its AC adapter.

D. Using the Geneva's Menu.

Once the Geneva has initialized itself, the 'Menu Screen' will be displayed, (see Figure 7.) Using the cursor keys located on the right side of the keyboard, (see Figure 8) you will be able to select a program to execute.

```
*** MENU screen ***  00/00/00 (SUN) 00:00:07  54.5k CP/M  ver 2.2 B PAGE 1/1
C:PIP
C:PIP       COM      C:STAT      COM      C:SUBMIT    COM      C:XSUB      COM
C:FILINK    COM      C:TERM      COM      C:CONFIG    COM      B:BASIC     COM
```

Figure 7, The Geneva's Menu Display

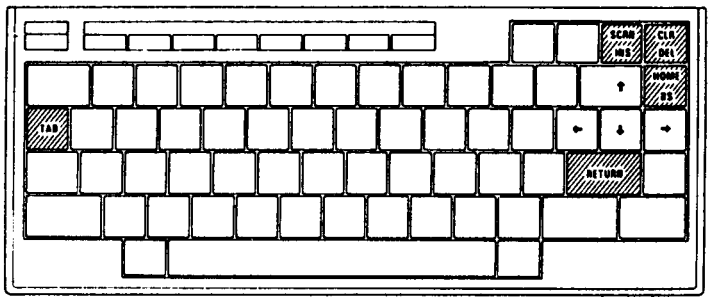

Figure 8, The Cursor Keys of the Geneva

In the top-left corner of the display, just below the words 'Menu screen', you will see the expression 'C:PIP'. This is the program (or command) presently selected for execution. On the line below, this same expression will be flashing. Press the right arrow key, now the word 'C:STAT COM' is flashing, and the phrase 'C:STAT' is displayed on the second line. You have just selected the 'STAT' command.

These 'entries' listed on the menu are called 'files.' There are several types of files that can exist in the Geneva. Some files contain data, such as a file that might have a letter you compose on the Geneva. Other files are actually programs that can be executed by the Geneva, these files are called 'COM' files, (which refers to Command) alas, this explains the word 'COM' after the file name. When in the menu mode, the Geneva searches for all the 'COM' files in the system and displays them on the screen. It then allows you to select a 'COM' file for execution by using the cursor keys and 'pointing' to a command file. Once you have chosen a command file, hit the 'RETURN', (the big red key labeled RETURN,) and the flashing file will be executed. Try this: use the cursor keys to select the program 'C:STAT', then hit the 'RETURN' key. 'STAT' is a program that will tell you how much free space exists in the system. When you execute the 'STAT' program you will see:

```
A>C:STAT
A: R/W, Space: 8k
C: R/O, Space: 33k

A> _
```

You might be wondering what all that gibberish represents, not to worry, I'll be discussing the different types of disk drives in the Geneva in the next section, for now it is important that you understand how to use the menu. You'll notice that the menu did not come back on the screen after the 'STAT' program was executed. To go back to the menu, type Control-C, (hold the 'CTRL' key on the left side of the keyboard down while typing the letter 'C'), this will cause the menu to be re-displayed.

E. Setting the Time and Date.

Use the cursor keys to select the 'C:CONFIG' command, and hit 'RETURN.' After a few seconds, you'll see this display:

```
*** MAIN MENU ***                          CONFIG  V1.0
    Select alphanumeric or ESC to exit.
1=auto power off                           7=RAM disk
2=CP/M function key                        8=RS-232C
3=cursor & function key display            9=screen mode
4=date & time                              A=serial
5=disk drives                              B=user BIOS
6=printer                                  C=country
```

It should be obvious that to set the time and date, you need to enter '4'. When you enter '4', you will see this on the display:

```
*** DATE & TIME ***
    Set date and time or ESC to return.
    Date as MM/DD/YY ?

Date                    :  00/00/00  (SUN)
Time                    :  00:16:07
```

Enter the date as requested in the format shown, and then hit 'RETURN.' If you should type in an invalid date, the CONFIG program will not accept it and will query you again for the date. Once the date is entered, the CONFIG program will then ask for the time, this should be entered as requested, in this format: HH:MM:SS (where HH is the hours, in 24 hour time, MM is the minutes, and SS is the seconds, usually 00.) It is very important that you enter the time in 24 hour time, so that the CONFIG program can distinguish between A.M. and P.M. Calculating 24 hour time is a very simple task, if the time entered is between 12:00 midnight and 12:00 noon, (A.M.) then enter the time directly, so for instance 9:32 A.M. would be entered as '9:32:00'. Leading zeros can be entered, but are not necessary, ('9:32:00' is the same as '09:32:00' to the CONFIG program.) If the time entered is after 12:00 noon and before 12:00 midnight,

(P.M.) you would add 12 to the hours, i.e., 4:19 P.M. would be entered as '16:19:00' into the CONFIG program. As with inputting the date, the CONFIG program will not accept an invalid time entry. After entering the date and time, the CONFIG program will display them and allow to re-enter either of them should you need to. If not, hit the 'ESC' key located above the keyboard on the left side, this will return you to CONFIG's main menu.

Do not concern yourself with the other menu selections in the CONFIG program at this time, once you are more familiar with the Geneva, you can go back and learn more about the CONFIG program. The Epson documentation will explain the other functions for you in detail. The purpose of this section is to allow you to set the date and access a program through the Geneva's built-in menu system. Hit the 'ESC' key a second time and you will be returned to the Geneva's menu.

4. The Geneva's Storage Devices

A. The Disk Drive.

As explained above, the Geneva stores lumps of data in an entity called a 'file,' (in reality, all computers use files of one form or another.) In a typical computer environment, these 'files' are stored on a device known as a disk drive, there being two basic types of disk drives, floppy disk and hard disk. At this time, I will not attempt to explain the differences between the two types of drives, as it is not relevant to the Geneva at the moment. Just understand that disk drives are physical devices that store groups of files.

The Geneva has several types of 'disk drives' it uses to store both program and data files. Some of these devices are fully electronic, (no moving parts) while some of these 'drives' are actually mechanical devices. The following is a list of the type of 'drives' the Geneva uses:

1. The RAM Disk
2. The ROM Capsule
3. The Microcassette Drive
4. The Micro-Floppy Disk Drive

The first three devices are actually built-in to the Geneva, while the last is an external device that is connected to the Geneva through a special cable. In the following paragraphs, I will discuss each of the different 'drives', as well as its advantages and disadvantages with respect to the Geneva.

B. The RAM Disk.

RAM is an acronym for Random Access Memory. This is the type of memory used by most computers for basic program and data functions. In the Geneva, a section of its RAM has been partitioned (separated) from the main memory and programmed to store files much like a normal disk drive would. When the Geneva is first initialized, it partitions 9216 (9k) bytes of RAM to the RAM disk. This RAM then becomes drive 'A', you'll never actually have to know where in memory the files are stored, just that the

RAM disk is drive 'A'. Earlier, when you executed the 'STAT' program, it displayed this line:

```
A: R/W, Space: 8k
```

Essentially, this says that drive 'A' is a 'Read/Write' drive, and there is 8192 bytes of free space left on the drive. The 'A:' refers to drive 'A', the 'R/W' means that drive 'A' can be read from and written to, and the 'Space: 8k' indicates the there is 8k (8192) bytes of unused storage. Some of the 'drives' in the Geneva cannot be written to, so they are designated as 'Read Only' or 'R/O'. You may wonder why only 8k bytes of storage are available when earlier I said that 9216 bytes were allocated for drive 'A'? This is due to the fact that 1024 bytes are used by the Geneva for what is referred to as 'drive overhead', this memory is required by the Geneva for internal drive functions such as the directory, and allocation tables. You really do not need to worry about these technical details, but I thought some of you might like to know them. The amount of the Geneva's memory allocated to the RAM disk can be set through the CONFIG program mentioned earlier, refer to the PX-8 Operations manual for details. If you have either the Multi Unit 64 or the RAM Disk 120k installed on your Geneva, then none of the Geneva's main memory will be needed for the RAM disk.

C. The ROM Capsules.

One of the more powerful features of the Geneva is that programs and data files can be programmed onto special memory chips known as ROMs. ROM is an acronym for Read Only Memory, and is a type of memory chip that retains its data even while there is no power to it. Programs such as Wordstar and BASIC are pre-programmed onto these chips, the chips are then 'pressed' onto plastic holders called 'carriers.' The ROM and carrier assembly are collectively referred to as a 'ROM Capsule.' When you opened the ROM capsule compartment cover to initialize the Geneva, I'm sure you noticed the ROM capsule sockets. These sockets contained the CP/M utility and BASIC programs, (more about CP/M later.) The capsules can be removed and replaced with other ROM capsules, a procedure which you'll be performing when you load and run the Wordstar word processor. In the standard Geneva environment, drives 'B' and 'C' are both ROM capsules, (if you have the Multi Unit 64, drive 'I' is also a ROM Capsule.) With the standard factory configuration of the Geneva, drive 'B' contains the BASIC language and drive 'C' has the CP/M utilities, (STAT is a CP/M utility.) When you executed the 'STAT' program, it said the Drive 'C' was 'R/O', which meant that it was 'Read Only' and could not be written to. That's the trade-off with ROM, although it will retain its data when powered-down, you cannot store data to it as you would with RAM. Of course the RAM disk in the Geneva does not lose its data when you shut the Geneva off, but don't be fooled, the RAM drive is continually drawing power from the main battery. If left unattended and uncharged for 6 months or a year, the RAM disk would eventually deplete the main battery's power and all the data would go away to data heaven. Not so with the ROM capsule, the programs and data in these chips are like luggage, you keep them forever.

D. The Microcassette Drive.

In the standard Geneva environment, drive 'H' is the microcassette drive. This drive acts much like the RAM disk, it can be read from and written to, with one minor

detail, its very SLOW! Relatively, that is. The RAM disk can store a file with a blink of an eye, the microcassette drive requires considerably more time. Although the microcassette might be slow, the Epson's implementation of this type of storage is by far the best I have come across. Most cassette storage systems require some sophisticated commands, while the Geneva only needs standard CP/M commands, allowing application programs to access the microcassette without modification. File storage procedures for the microcassette are identical to that of the RAM disk, the only difference being that a 'REMOVE' command must be executed before physically taking the microcassette out of the drive. You will need to refer to the Epson documentation for the steps regarding this procedure. The primary purpose for the microcassette is to archive files created and stored on the RAM disk. You might write a letter using Wordstar and store it on the RAM disk. When you have completed the letter, you would copy the file from the RAM Disk to the microcassette, thereby protecting yourself should the Geneva's battery decide to 'check-out.' In reality, Wordstar (and other programs,) will not let you save your work to the microcassette directly, you would need to save them first to the RAM disk and then from the RAM disk to the microcassette. Refer to the Epson documentation for more detailed information about the microcassette.

E. The Micro-Floppy Disk Drive.

Although you may not have purchased the PF-10 micro-floppy disk drive, you might want to know a little about the unit. The PF-10 is a self-contained (battery built-in) micro-floppy disk drive that connects to the Geneva via the high speed serial port. The data transfer rate is 38.4k baud. On the standard Geneva system, the micro-floppy drive is drive 'D'. Commands and programs access the drive just like the other Geneva storage devices. Even though the micro-floppy disk drive is not as fast as the RAM disk drive, it is considerably faster than the microcassette, and has a much greater data capacity than the microcassette, (280k bytes for a micro-floppy vs. 30k for a microcassette.) Two or more micro-floppy disk drives can be chained together using additional serial connectors. Presently, DAK is offering the PF-10 micro-floppy disk drive along with the cable and CP/M utility disk (includes the format and clone programs,) call DAK and ask for DAK order number 4614.

5. Using Wordstar

A. Introduction.

In the last several months, I have spent many hours working with and programming the Geneva. I developed the DAKCOMM program ROM capsule and other programs right on the Geneva. But one of the programs that impressed me most was the Portable Wordstar written specifically for the PX-8. Wordstar was first released in 1978 by Micropro and was designed to run in a CP/M environment. CP/M is a powerful Disk Operating System (DOS) initially written in 1976 for the 8080 and Z-80 microprocessors, (the Geneva employs the Z-80.) I first started using Wordstar in 1979, after building my own CP/M computer, (for you computer historians, it was an S-100 system.) I could not believe my eyes! I had the full power of a word processor right in my own bedroom. When Drew Kaplan first showed me the Geneva, he told me that it ran Wordstar. I said, "C'mon Drew, on that little machine?" Boy, did I eat my words! The Portable Wordstar on the Geneva completely smokes the early versions I used on my

computers. And Portable Wordstar has no problem keeping up with the Wordstar version available for the MS-DOS (IBM) computers. With a couple exceptions, all the commands found on the desktop version are available on the Geneva.

Basically, I will show you how to:

1. Load the Portable Wordstar (herein after referred to as just "Wordstar") ROM capsule.
2. Run Wordstar.
3. Create and edit a Wordstar file.
4. Save the Wordstar file.
5. Connect the printer to the Geneva.
6. Print the Wordstar file.
7. Save the Wordstar file from the RAM Disk to the Microcassette.

The discussion of Wordstar will be kept to relatively simple terms, and I will only cover basic editing features of the word processor. The more sophisticated commands of Wordstar are explained quite well in the manuals included with the program. My basic intent is to get you 'up and running' in the Wordstar environment. Please understand that this is only a very basic introduction to Wordstar, and full knowledge of the program will require extensive use of the documentation included with Wordstar.

B. Loading the Portable Wordstar ROM Capsule.

Loading the Wordstar ROM capsule is a very simple operation, and should only take a minute or two. Perform the following procedure:

1. Close the LCD Display into its locked position and replace the keyboard cover. Turn the Geneva up-side-down on a table or desk. The front of the unit should be facing towards you.

2. Locate the ROM capsule compartment cover, (the same cover that was removed to initialize the Geneva in Section 3.) Unlatch the cover and lift it out, (see Figure 4.) You will see the silver flap.

3. Lifting the silver flap out of the way will expose the two ROM capsule sockets. The sockets are labeled 'ROM 1' and 'ROM 2'. Both will contain ROM capsules, (see Figure 9.)

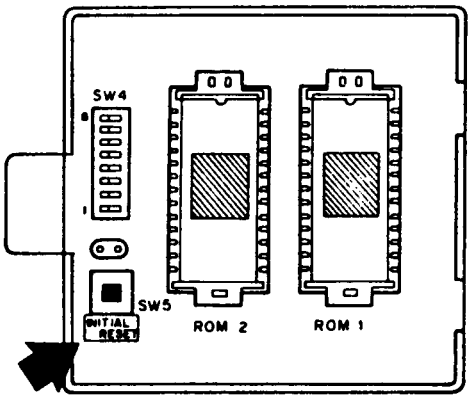

Figure 9. The ROM capsule compartment.

4. Remove the ROM capsule in the socket labeled 'ROM 1'. You will probably notice the word 'BASIC' on the ROM itself. This is the Basic language program ROM capsule, and is not as important as the CP/M utility ROM capsule in the 'ROM 2' socket. The CP/M utilities will be needed later on. If you can't remove it by hand, try using the end of a plastic ballpoint pen (use the top, not the point) to pry the carrier out of the socket (see Figure 10). ROM capsules can be somewhat hard to remove the first few times, but after that are easily changed by hand. Set the Basic ROM capsule aside on the table for the moment, taking care not to touch the pins of the ROM.

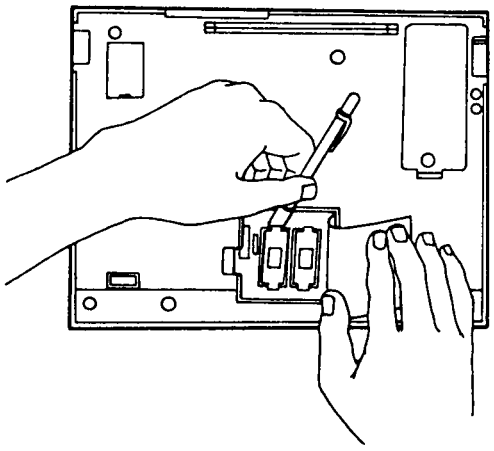

Figure 10, Use the top end of a plastic pen to pry the ROM capsule out of the socket.

WARNING: **ROM chips are susceptible to damage from static electricity. Before you pick them up, *ground* yourself by touching any large metal object within reach. Always pick up ROM capsules by their plastic carriers, being careful not to touch the metal pins of the ROMs. Touching the pins can cause corrosion or damage from static electricity.**

Note: Always *rock* the ROM capsule out by prying first on one side, then on the other. Too much force on just one side may cause you to break the tab on the ROM carrier.

5. Remove the ROM capsule labeled 'Portable Wordstar' from the plastic box containing the ROM capsules. Holding the ROM capsule's tabs with your thumb and forefinger, observe the small extrusions located directly under the tabs. One end has one extrusion while the other end has two. If you examine the socket in the ROM capsule compartment, you'll see that there are corresponding notches in the socket, with the two-notched end being towards the front of the computer. Carefully place the ROM capsule into the socket, making sure that the notched end match. The 'keyed' designed makes it impossible to insert the ROM capsule incorrectly, although I am sure there are some of you who will successfully insert the capsule backwards using a hammer. Once the ROM capsule has started to slide in place, use two fingers to apply even pressure to the capsule, and push it all the way into the socket. When the capsule is seated properly, the top of the ROM will be level with the socket.

Note: While writing this manual, I gave my girlfriend one of the Geneva packages to use so that she could critique this manual. Although she is not the computer genius that I am (sorry Drew,) she is quick to learn and not uncomfortable around computers. One night, she called me and told me she could not insert the Wordstar ROM capsule. I asked her if she had the end with the two notches towards her, and she said she did, but the ROM capsule would not go into the socket. Well to make a long story short, she thought the 'notches' were square holes located in the handling tabs themselves! If you look at the ROM capsule, you'll see that the one-notched end has two square holes in the tab above the notch, the opposite being true for the other end. How confusing! Just remember, the capsule can only go in one way! Terry, you are simply too analytical!

6. Lower the silver flap back into its original position and replace the ROM capsule compartment cover. Turn the Geneva upright, remove the keyboard cover and open the screen.

7. Pick up the Basic ROM capsule and put it into the plastic box that contained the Wordstar ROM capsule. You should protect your ROM capsules from elements that might harm them such as static electricity sources, heat sources, corrosive materials, mother-in-laws, etc. A good way to protect the ROM capsules is to wrap them in aluminum foil.

You are now ready to run Wordstar.

C. Running Wordstar.

There really is not very much to this step. Just turn on the Geneva, and when the menu comes up, select and execute 'B:WS'. Simple? Yes. However, some of the DAK Geneva computer packages were shipped with the Seikosha printer model 'SP-1000AP', you'll find the model number right on the front panel of the printer. If your Seikosha printer has the model number 'SP-1000AS', skip the next several paragraphs and proceed to section D. If you have the SP-1000AP, you'll need to follow the procedure outlined below. The reason for this is that the SP-1000AP must have a patch program executed before it will print a file correctly. The DAK Communications ROM capsule contains a program call 'WSP'. This program has to be loaded into the Geneva. There are basically two ways this can be achieved, they are:

1. Remove the Portable Wordstar ROM capsule, and replace it with the DAK Communications ROM. Turn the Geneva on. When the menu appears, select the command file 'C:PIP' and hit RETURN. After a few seconds, a '*' will be displayed. Enter the following line of text:

   ```
   A:=B:WSP.COM
   ```

   This command will copy the program called 'WSP.COM' to the RAM disk. After a second or two, you will get another '*'. Hit RETURN and you will be returned to the Geneva's menu. Shut the unit off and replace the Portable Wordstar ROM capsule into the 'ROM 1' socket. Turn the Geneva on, and when the menu comes

up, you'll notice the addition of a command 'A:WSP COM' in the menu. Select this command and hit RETURN. As this program will tell you, it patches Wordstar so that it may run properly with the SP-1000AP printer. Wordstar will now be running.

2. If you have installed the Multi Unit 64, you'll be able to load the DAK Communications ROM capsule into drive 'I'. When the Geneva's menu comes up, the command 'I:WSP COM' will be displayed, allowing you to select it directly from the 'I' drive. Refer to Section 7 or the Multi Unit 64's manual for more detailed information.

D. Creating and Editing a Wordstar File.

Once Wordstar has been loaded and executed, the 'Opening Menu' will be displayed, (see Figure 11.)

```
      not editing

              < < <  O P E N I N G   M E N U  > > >
D  Open a  document  file     ¦  P  PRINT  a file  ¦  T  TRANSMIT a file
N  Open a non-document file   ¦  O  COPY   a file  ¦  C  RECEIVE files
L  Change logged drive        ¦  Y  DELETE a file  ¦  X  EXIT to system
```

Figure 11, Wordstar's Opening Menu

From this menu, you will create, edit, and print your Wordstar files. To create a Wordstar data file, perform the following steps:

1. Type the letter 'D'. Wordstar will then ask:

   NAME OF FILE TO EDIT?

2. Enter the name of the file you wish to edit. Since this is probably a new file, you will have to think of a name for it. Try to use a name that will lend itself to the file's contents. For instance, if you were writing a letter to the I.R.S, you might want to call the file 'IRSLETT'. This would instantly tell you what this file is all about. Names such as 'LETTER1' or 'LETTER2' do not give any clue as to their contents. File names can be up to eight letters and a file type of up to three letters can also be used. Use a period to separate the filename from the file type. As an example, I could call the I.R.S. letter 'IRS.LET', where 'LET' is the file type. The period separates the filename from the file type. For your first file, why not use the name 'TEST' when asked to enter the filename. If you brought up Wordstar from the Geneva's own menu, chances are that Wordstar will store you file to the RAM disk drive 'A', however, if for some reason the destination drive for your file is either the ROM capsule drives, or the microcassette, Wordstar will display an error message and you will have to re-enter the file name again. This time, preface the file name with an 'A:', this will direct

Wordstar to store the file to the RAM disk drive 'A'. For obvious reasons, Wordstar will not allow a file to be written to either the ROM capsule drives or the microcassette drive.

3. Once the file has been properly named, Wordstar will go into the editing mode. At the top of the screen, you will see the filename, the page number, the line number and the column number. There are also several 'toggle' status fields located on the top line, (such as the 'INSERT' toggle.) Below the top line is the ruler line which displays the margin settings as well as the tab stops. On the right side of the screen, there are periods. These periods represent 'dead space', dead space is screen area completely void of any text and always follows the very end of the file. You will not be able to move the cursor into dead space. Go ahead and type in the following line of text:

   Now is the time for all good men to come to the aid of their party.

   You should notice that the word 'party' went over the margin and then was brought down to the next line automatically. This is called wrap-around or word-wrap and eliminates the need to enter a carriage return after every line is entered. The only time you should use a carriage return, (the RETURN key) is to end a paragraph. Now, hit the space bar twice and enter the same line as before. You'll probably notice the word-wrap action again. At this point your display should look like this:

```
          A:TEST  PAGE 1 LINE 3 COL 13                          INSERT
L----!----!----!----!----!----!----!----!----!----!----!--------R
Now is the time for all good men to come to the aid of their
party.  Now is the time for all good men to come to the aid of
their party.
```

4. Now use the cursor keys to move the cursor (the blinking block,) around on the screen. The arrow keys will move the cursor any where on the screen you want. But if you attempt to position the cursor past the bottom of the text, nothing happens. Remember, this is dead space and the cursor cannot exist in dead space. Using the cursor keys, place the cursor over the 'm' in the word 'men' in the second line. Now type a CTRL-G, (hold down the CTRL key and type 'G') did you observe what happened to the 'm'? It went away, (yes, to data heaven) type CTRL-G again. Now the 'e' in 'men' is gone. CTRL-G deletes the character that is directly 'under' the cursor. Type CTRL-G once more to off the 'n'. Of course, our second sentence does not make sense now, but don't worry we will fix it. Earlier, when we first started editing this file, you may have noticed the word 'INSERT' in the upper right corner of the screen. This is the insert 'toggle'. If this toggle is 'on' (the word 'INSERT' present,) any characters entered will be 'inserted' into the text, that is, all characters to the right of the cursor will be 'pushed' to the right to make room for the new letters being typed in. Let's type in a replacement word for 'men', the cursor should be flashing just to the left of the word 'to' in the second line. Type in the word 'women' (no sex discrimination

here,) notice how the letters after the cursor 'slide' to the right as you entered the word 'women'? This is the insert mode. Typing CTRL-V will toggle the insert mode, and any characters entered will 'typeover' letters to the right of the cursor.

5. Now type in a CTRL-B, and watch the screen. After adding the word 'women', the right margin was not 'lined-up', but issuing the CTRL-B command will reformat the page. The document should now be 'right justified.' Hit the carriage return a couple of times and lets save the file.

E. Saving the Wordstar file.

To save your new masterpiece, type CTRL-K (hold the CTRL key down while typing 'K'), and the type the letter 'D'. This command will save your file 'TEST' to the RAM disk drive 'A', and return you to the opening menu. That's it! What could be easier?

F. Connecting the Seikosha Printer.

Included the many items you received with you Geneva package, is a grey printer cable. One end of this cable is a barrel-shaped 'DIN' connector that is plugged-in to the jack on the back panel of the Geneva that is labeled 'RS-232C', (see figure 12.) The other end is a 'DB-25' connector that gets plugged into the back of the Seikosha printer.

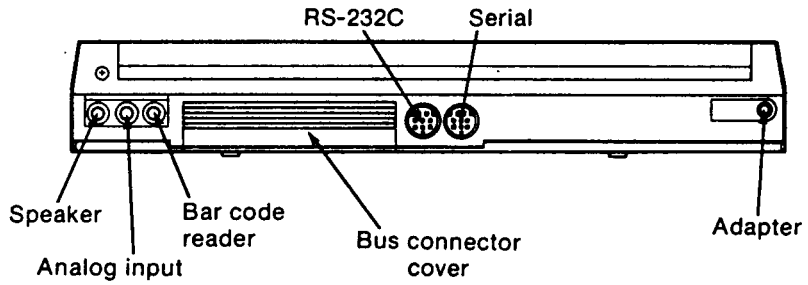

Figure 12, the Geneva's back panel.

Referring to the Seikosha printer user's manual, load the printer with paper, and turn it on. You may want to select Near Letter Quality mode, do so by pressing the 'ON LINE' button, then the 'NLQ' button and then the 'ON LINE' button once more. The 'NLQ' LED should be illuminated now. Also make sure that the printer is set for 4800 baud (if you received the SP-1000AP printer, see the note below,) this is the speed at which that characters will be sent to the printer from the Geneva. To set the baud rate, refer to the Seikosha SP-1000AS printer owner's manual (page 20,) and set the dip switches located in the back of the printer. As outlined in the manual, dip switch 2 controls the receiving baud rate for the printer. Dip switch 2-1 should be *off*, and switch 2-2 should be *on*. Be sure to cycle the power on the printer after re-setting the baud rate dip switch. Remember, the Geneva assumes that the printer will be receiving characters at 4800 baud.

Note: If you received the Seikosha printer model SP-1000AP, the Geneva and the printer will have to be re-configured as their baud rates will not be compatible. This two step procedure is relatively simple, it entails the following:

1. From the Geneva's main menu (type the command 'X' to leave Wordstar,) select and execute the 'CONFIG' program. When CONFIG's menu appears, select function No. 8, (RS-232C) and you will see the RS-232C menu. Type the number '2', this will set the Geneva's RS-232C baud rate to 9600 baud. Hit the ESC key twice to return to the Geneva's menu.

2. Referring to the Seikosha printer's owner's manual, (page 89) make sure that switch 8 of dip switch 1 is in the *off* position. This will select the reception baud rate of 9600 baud for the printer. Turn the printer on (if it is already on, cycle the power,) and you'll be ready to print your Wordstar file.

Load the printer with paper (check owner's manual for details,) and switch printer power on. You are now ready to print your Wordstar file.

G. Printing a Wordstar File.

From Wordstar's opening menu (re-enter Wordstar if you left the program for some reason, **SP-1000AP** owners, use the WSP command,) select the command 'P' (type a 'P') and Wordstar will query you for the name of the file to print. Enter the name of the file **(A:TEST)** as you did earlier (prior to editing the file,) and assuming the file exists, Wordstar will ask you a series of questions. For the time being, just hit RETURN for each of these questions (the Wordstar reference manual can tell you about these printing options,) after the the last question, Wordstar will display:

```
READY PRINTER, HIT Return: _
```

Just hit the RETURN key and the printer should start printing the document you just created. When the file is finished printing, you will be in Wordstar's opening menu. If the file does not begin printing, check all your printer connections and settings (making sure that the printer cable is plugged into the jack labeled 'RS-232C' instead of the jack labeled 'SERIAL', for example.) If that doesn't help, contact DAK's technical support staff for assistance.

H. Saving a Wordstar file to the Microcassette.

Now that you have just finished a document that will change the face of humanity, you'll want to save it for posterity onto your microcassette. This process is very simple but involves some waiting around. However, it is well worth the wait when you consider the amount of pain and sorrow you would incur if the Geneva decided 'throw-up' on your file. Remember, although the RAM disk drive acts like a floppy, it is still RAM, and is subject to all those little quirks that can make RAM 'forget' (such as the batteries going 'bye-bye'.) To back-up the Wordstar file from the RAM disk to the microcassette, perform the following steps:

1. Get a new microcassette and load it into the microcassette drive, side 'A' up (actually the side does not matter, just use the side positioned at its beginning.) You may use a sixty minute cassette if you like, but you will be wasting half the

cassette, due to the fact that the Geneva always assumes that a thirty minute cassette is in use. Each side of the cassette is separate, and each side has its own directory.

2. The first step you have to do is to initialize the new microcassette you just loaded into the drive. To do this, hold down the 'CTRL' key and press button labeled 'SYSTEM' (actually, it is also labeled 'HELP',) it is on the top row of buttons, above the '4' key. This will bring up the 'SYSTEM' menu. This menu can be accessed from anywhere in the system, (Geneva's menu, Wordstar, CONFIG, etc.) as it is a built-in menu of the Geneva. When the system menu comes up, hold down the SHIFT key and press the top-row button labeled 'PF3', this is the microcassette directory initialization command. The Geneva will then query:

```
-Tape dirinit (Y/N)?_
```

Enter a 'Y' and the microcassette drive will begin to operate. Don't worry about the position of the tape, as the Geneva will rewind the tape prior to initialization. A few seconds later the Geneva will display the word `'dirinit'` and initialize the microcassette. When it is finished, the system menu will return, just hit the ESC key and you will be returned back to your starting point (the Wordstar menu, for instance.)

Note: **The microcassette need only be initialized once. Initializing the microcassette wipes out everything that was previously on the tape. This procedure should only be performed once, when the cassette is new or when the cassette becomes unreadable (as in the case of a data error.)**

3. From the Wordstar opening menu, select the 'COPY a file' command (type an 'O',) and answer the questions as follows:

```
NAME OF FILE TO COPY FROM? A:TEST
NAME OF FILE TO COPY TO  ? H:TEST
```

The microcassette drive will start whizzing and in 15 or 20 seconds, your file will be saved for posterity. Be sure to preform a 'REMOVE' operation (from the system menu,) before you take the cassette out of the drive. As you may have noted, the microcassette drive is drive 'H' in the Geneva. To exit Wordstar, type the letter 'X'.

6. Installing the Multi-Unit 64

Included with your Geneva package is one of the following:

1. **The Multi-Unit 64** or,
2. **The Modem Wedge** or,
3. **The RAM-Disk 120.**

These modules install on the Geneva to provide extra features not already built-in to

the machine. In this section, I will explain the steps necessary to install these units into your Geneva computer. They are as follows:

1. Save all work files from the RAM-Disk to the microcassette. This is required due to the fact that the RAM-disk will be wiped clean when you install either the Multi-Unit 64 or the RAM Disk 120, (the Modem Wedge has no effect on the RAM disk.) To copy all the files from the RAM disk to the microcassette, first load a blank and initialized (refer to section 5.H.2 for details regarding the initialization of the microcassette,) cassette into the microcassette drive. Second, select and execute the 'PIP' command from the Geneva's menu. When the '*' appears, enter the command:

   `H:=A:*.*` *(This command will copy all files to drive 'H')*

   After several minutes of drive-whizzing, the Geneva's main menu will return. If you do not have any files on the RAM Disk, this step can be skipped. Also be sure to perform a 'REMOVE' function from the system menu (as outlined earlier in the Wordstar section,) if you don't, all the files you just copied to the microcassette will be gone with the wind.

2. Shut the Geneva off, close the L.C.D. screen and slide the keyboard cover into place. Turn the Geneva up-side-down and face the back panel towards you. Next to the connector labeled 'RS-232C', you will notice a small cover, using a small screwdriver, remove this cover. This will expose a long and narrow connector inside the unit. Take the wedge (the generic term for these units) and mate it to the bottom of the unit so that the ribbon cable and connector are in the general area of the Geneva's connector. Also be sure that the switch labeled 'BACK-UP' (on the Multi-Unit 64 and the RAM Disk 120 units only,) is in the *off* position. The wedge will only fit properly one way, be sure to fold up the Geneva'a legs before mounting the wedge onto the unit. Using the four screws supplied with the wedge, secure it to the Geneva.

3. Insert the connector extending out of the wedge into the receptacle of the Geneva, making sure that the pins line-up correctly. Replace the cover to the Geneva. Flip the Geneva upright, and remove the keyboard cover and open the L.C.D. screen. Set the 'BACK-UP' switch located on the wedge to the *on* position. Turn the power on. After the main menu has appeared on the screen, you will want to re-initialize the Geneva so that it will install the new RAM Disk memory. To do this, use a pointed object, (such as a ball point pen) to press the Reset button located on the left side of the Geneva, while at the same time pressing the 'Shift' and 'NUM GRAPH' keys located next to each other on the right side of the keyboard. The Geneva will then display the message *initializing* and then return to its' menu mode. The date and time will have to be re-programmed after performing this type of reset.

Note: **If you installed the modem unit on your Geneva, the above reset procedure should be ommitted as this will wipe out the RAM Disk data which you may have not backed-up.**

If you install the Multi-Unit 64, you can now add another ROM capsule to your system. The cover is located on the Multi-Unit 64 and can be remove without any tools. Once a ROM capsule has been inserted, the files will appear on drive 'I'. If either the

Multi-Unit 64 or the RAM Disk 120 was installed, the RAM disk allocation command (function # 7) of the CONFIG program will be disabled, since all system RAM will be allocated to CP/M. The internal modem of both the Multi-Unit 64 and the Modem wedge can be accessed by the communications program supplied with your Geneva package, refer to this program's documentation for details.

7. The CP/M Utilities

'CP/M' is an acronym that stands for 'Control Program/Monitor.' It is a powerful disk operating system (DOS) developed in 1976. There are several programs that were written which facilitate the use of CP/M. In this section, I will briefly list and discuss the utility programs that are included on the CP/M utility ROM capsule that comes with the Geneva. This is not intended to be a complete description of the utilities, but a quick introduction to what is available. More detailed instructions are offered in the CP/M-80 guide for the PX-8.

PIP.COM:

PIP is an acronym for 'Peripheral Interchange Program.' This program is essentially used for file copying and transfer. It will allow you to copy a file from any one of the Geneva's storage devices to another. It will also send any standard text file to the printer, (except for Wordstar files, use Wordstar for them.) You would use PIP to copy a file from the RAM disk drive to the microcassette, or vise-versa.

STAT.COM

STAT is a program which will yield a variety of information about the Geneva's storage devices. It's most common use is to display the amount of free storage space on a particular device, specifically the RAM disk, microcassette, or micro-floppy disk drive. As I stated earlier, the ROM capsules cannot 'take' anymore data, so this information is useless. STAT will also display certain characteristics about any of the storage devices. Such information might be the total drive capacity, or the number of directory entries allowed.

SUBMIT.COM

SUBMIT is a special utility that will allow you to create a text file of commands and execute them all in sequence at one time. These text files are often referred to as 'batch' files, where as you are executing a 'batch' of commands. For instance, if you wanted to copy the file 'TEST' from the RAM disk to the microcassette, and then see how much space was left on the microcassette in the drive, you would create a text file (using Wordstar) that would contain the following text:

```
C:PIP H:=A:TEST      (This will copy the file 'TEST' to the microcassette)
C:STAT H:            (This will display the free space on drive H)
```

When creating this file, you might give it the name 'COPYTEST', so that when you wanted to execute this file, you would enter the command:

```
C:SUBMIT A:COPYTEST
```

I am assuming that you wrote the SUBMIT file to drive 'A' using Wordstar. Once this command line is entered, the above two commands would be executed in succession.

XSUB.COM

XSUB is a utility only used by the SUBMIT program. It will let you execute command lines *inside* programs that are part of SUBMIT command files. This is pretty heavy stuff, so you'll probably want to refer to the Geneva's CP/M-80 Guide for more information about this command and SUBMIT.

FILINK.COM and TERM.COM

FILINK and TERM are two communications utilities included with the Geneva. FILINK was primarily designed to allow Geneva owners to upload and download files to and from the Epson QX-10 running a similar utility. Unfortunately, the protocol used is not standard, therefore use with other communications programs was not possible. TERM is a program that does standard terminal emulation through the Geneva's RS-232C serial port. You would use this program in conjunction with an external modem. It is obvious that this program was 'quick and dirty', due to the fact that it is basically featureless. For instance, to set the serial baud rate, you have to use the CONFIG program first, then go into TERM. I consider this somewhat of an inconvenience, I guess I'm lazy. In reality, you will not need either of these programs due to the fact that we have included my incredible program called 'DAKCOMM' (no modesty here.) This program does both file transfer and terminal emulation and has all kinds of neat little features, (including baud rate selection.) What a program! What a guy!

CONFIG.COM

I have already covered the CONFIG program to some degree, and it is pretty obvious what CONFIG does for the Geneva, but I will list its basic functions quickly:

1) Set or disable the auto-power off feature of the Geneva. The inactivity time period can be set to any desired length.

2) Program any or all of the 'PF' or function keys of the Geneva.

3) Set certain cursor characteristics, and display line features.

4) Set the date and time.

5) Set the Geneva's disk drive mapping. This function will allow you to re-assign the different physical devices (the RAM disk drive, for instance,) to different logical devices (to drive 'B' instead of drive 'A', for example.)

6) Assign the port that the Geneva will assume is for printer output.

7) Set the amount of space allocated for the RAM disk drive.

8) Set the baud rate, data bit count, parity, and stop bit count of the RS-232C serial port.

9) Set the number of lines for the Geneva's 'virtual' screen mode.*

A) Set the baud rate for the Geneva's 'Serial' port.

B) Set the number of pages of RAM required for a particular USER BIOS.

C) Set the country status, used for several characters, such as English pound sign instead of the dollar sign.

* Although the Geneva physically has 8 lines of L. C. D., it has 24 (default) lines of 'virtual' display capability. If you press the *up* or *down* arrow keys while holding the 'Shift' key, you'll notice the display scrolling towards the direction of the key you pressed. This feature allows you to examine data that may have *scrolled* off the physical end of the display.

8. Conclusion

Well, here we are at the end of this manual and I hope you have been able to put some of this information to good use. I make no qualms about trying to answer everyone's questions, that is just not possible. But I have attempted to inform you of the different problems that you were likely to encounter while learning about and using your Geneva computer. There is still a massive amount of information about this amazing little marvel that has to be assimilated, and it will take more time than you have probably spent thus far. But please be patient, I have fifteen years of computer experience (I'm only 26,) and I spent three very intensive weeks learning everything I could about the Geneva. Just when I thought I knew it all, the Geneva surprised me with another neat feature.

If you have questions that you are unable to answer, even after reviewing this manual and the Epson documentation, please call the DAK technical support line (the telephone number is on the front cover,) for assistance. The technical support staff has been versed on the use of the Geneva and they should be able to help you. However, if the DAK technical support staff is unable to answer your question for some reason, you may bring in the 'BIG GUNS' and contact me one of two ways. You may call DAK at their corporate office at **(818) 888-8220** (this is a toll call, a price you have to pay for a higher level of technical assistance,) and leave a message for me, Courtney Harris. Please include your name and phone number. The moment I receive the message, I will call you **collect**, (yes, I said collect) and give you as much time as you require to solve your problem. I do not mind giving DAK customers a little of my time as long as they pay for the phone call. I will be checking in for messages at least once per day, so you won't have to wait very long for a response. Also include in your message, the best time to reach you, morning, afternoon, or evening. Another way to contact me is to write to me, care of DAK. Here is the address:

Mr. Courtney Harris
c/o DAK Industries, Inc.
8200 Remmet Avenue
Canoga Park, Ca. 91304

I will contact you as soon as possible.

Enjoy your new Geneva and **HAPPY COMPUTING!!**

ABOUT THIS MANUAL:

This document was written entirely on a Epson PX-8 Geneva using Wordstar and a IBM PC/AT under WordPerfect. It was printed by an Hewlett-Packard LaserJet printer.